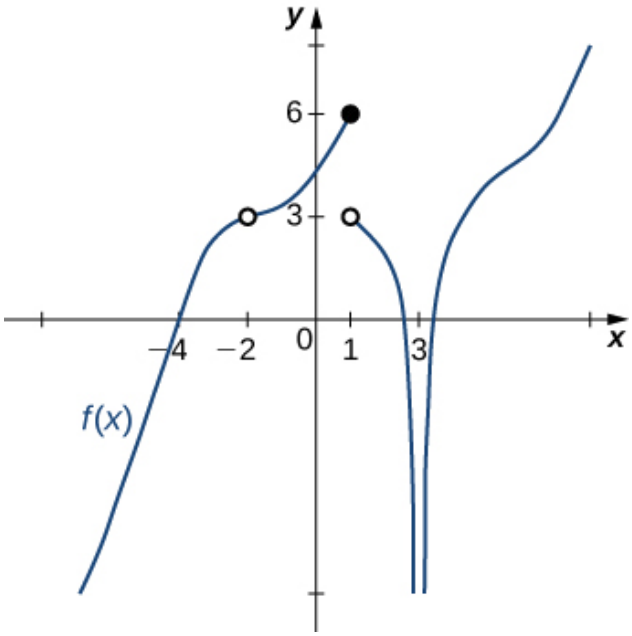
1. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x) = 3$.



A. 1

B. $-\infty$

C. -2

D. Multiple a make the statement true.

E. No a make the statement true.

---

2. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to -5^-} \frac{-8}{(x+5)^8} + 5$$

A. $f(-5)$

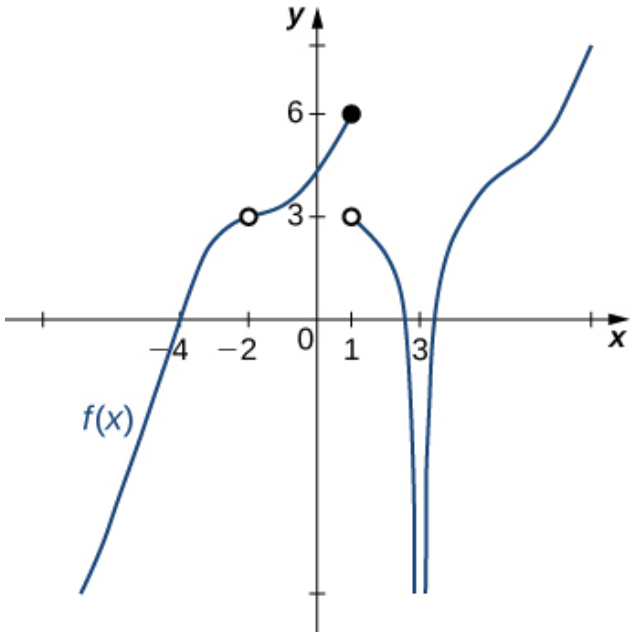
B. ∞

C. $-\infty$

D. The limit does not exist

E. None of the above

3. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x)$ does not exist.



A. 1

B. 3

C. -2

D. Multiple a make the statement true.

E. No a make the statement true.

4. Evaluate the limit below, if possible.

$$\lim_{x \to 9} \frac{\sqrt{3x - 11} - 4}{8x - 72}$$

A. 0.016

B. 0.217

C. ∞

D. 0.125

E. None of the above

---

5. Evaluate the limit below, if possible.

$$\lim_{x \to 9} \frac{\sqrt{4x - 11} - 5}{6x - 54}$$

A. 0.067

B. 0.100

C. 0.333

D. ∞

E. None of the above

---

6. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to -5^-} \frac{-8}{(x+5)^6} + 6$$

A. $f(-5)$

B. ∞

C. $-\infty$

D. The limit does not exist

E. None of the above

---

7. To estimate the one-sided limit of the function below as x approaches 8 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{8}{x} - 1}{x - 8}$$

A. $\{7.9000, 7.9900, 8.0100, 8.1000\}$

B. $\{7.9000, 7.9900, 7.9990, 7.9999\}$

C. $\{8.1000, 8.0100, 8.0010, 8.0001\}$

D. $\{8.0000, 7.9000, 7.9900, 7.9990\}$

E. $\{8.0000, 8.1000, 8.0100, 8.0010\}$

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8. To estimate the one-sided limit of the function below as x approaches 2 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{2}{x} - 1}{x - 2}$$

A. $\{2.1000, 2.0100, 2.0010, 2.0001\}$

B. $\{1.9000, 1.9900, 2.0100, 2.1000\}$

C. $\{2.0000, 1.9000, 1.9900, 1.9990\}$

D. $\{1.9000, 1.9900, 1.9990, 1.9999\}$

E. $\{2.0000, 2.1000, 2.0100, 2.0010\}$

---

9. Based on the information below, which of the following statements is always true?

$$f(x) \textit{ approaches } \infty \textit{ as } x \textit{ approaches } 4.$$

A. x is undefined when $f(x)$ is close to or exactly ∞.

B. $f(x)$ is close to or exactly 4 when x is large enough.

C. $f(x)$ is undefined when x is close to or exactly 4.

D. $f(x)$ is close to or exactly ∞ when x is large enough.

E. None of the above are always true.

---

10. Based on the information below, which of the following statements is always true?

$$f(x) \textit{ approaches } 17.314 \textit{ as } x \textit{ approaches } 6.$$

A. $f(6) = 17$

B. $f(17)$ is close to or exactly 6

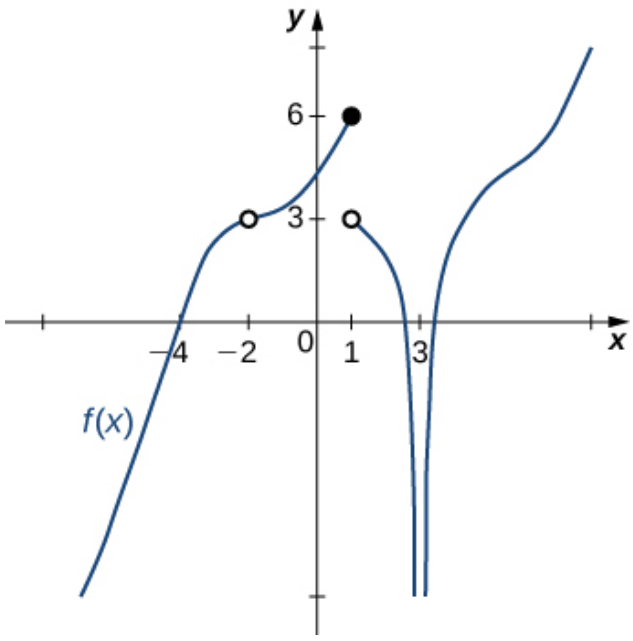
C. $f(6)$ is close to or exactly 17

D. $f(17) = 6$

E. None of the above are always true.

---

11. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x) = 0$.



A. 3

B. -4

C. 0

D. Multiple a make the statement true.

E. No a make the statement true.

---

12. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to 7^+} \frac{1}{(x-7)^6} + 1$$

A. $-\infty$

B. ∞

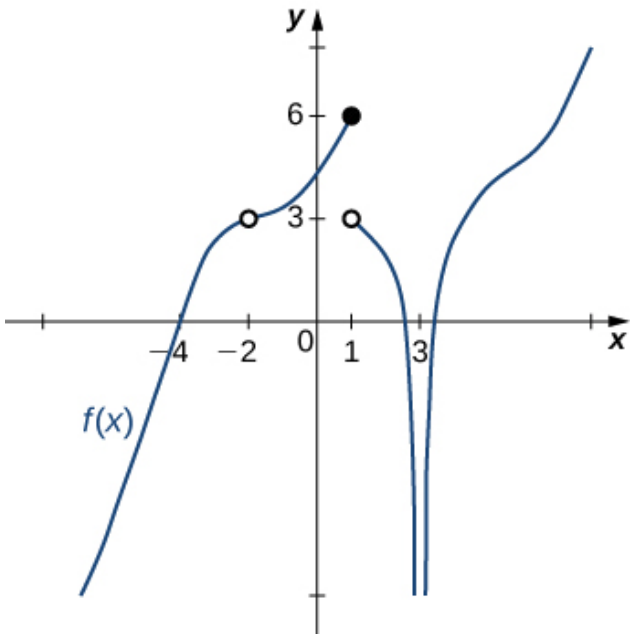
C. $f(7)$

D. The limit does not exist

E. None of the above

---

13. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x) = -\infty$.



A. 3

B. -2

C. $-\infty$

D. Multiple a make the statement true.

E. No a make the statement true.

---

14. Evaluate the limit below, if possible.

$$\lim_{x\to 7} \frac{\sqrt{9x-27}-6}{2x-14}$$

A. ∞

B. 1.500

C. 0.042

D. 0.083

E. None of the above

---

15. Evaluate the limit below, if possible.

$$\lim_{x\to 4} \frac{\sqrt{8x-16}-4}{6x-24}$$

A. 0.167

B. ∞

C. 0.021

D. 0.125

E. None of the above

---

16. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x\to -9^-} \frac{-4}{(x-9)^6}+5$$

A. ∞

B. $-\infty$

C. $f(-9)$

D. The limit does not exist

E. None of the above

17. To estimate the one-sided limit of the function below as x approaches 10 from the right, which of the following sets of numbers should you use?

$$\frac{\frac{10}{x} - 1}{x - 10}$$

A. $\{10.0000, 9.9000, 9.9900, 9.9990\}$

B. $\{10.1000, 10.0100, 10.0010, 10.0001\}$

C. $\{9.9000, 9.9900, 9.9990, 9.9999\}$

D. $\{10.0000, 10.1000, 10.0100, 10.0010\}$

E. $\{9.9000, 9.9900, 10.0100, 10.1000\}$

18. To estimate the one-sided limit of the function below as x approaches 7 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{7}{x} - 1}{x - 7}$$

A. $\{6.9000, 6.9900, 7.0100, 7.1000\}$

B. $\{6.9000, 6.9900, 6.9990, 6.9999\}$

C. $\{7.0000, 6.9000, 6.9900, 6.9990\}$

D. $\{7.0000, 7.1000, 7.0100, 7.0010\}$

E. $\{7.1000, 7.0100, 7.0010, 7.0001\}$

19. Based on the information below, which of the following statements is always true?

$$f(x) \textit{ approaches } 5.448 \textit{ as } x \textit{ approaches } 7.$$

A. $f(x)$ is close to or exactly 7 when x is close to 5.448

B. $f(x) = 7$ when x is close to 5.448

C. $f(x) = 5.448$ when x is close to 7

D. $f(x)$ is close to or exactly 5.448 when x is close to 7

E. None of the above are always true.

---

20. Based on the information below, which of the following statements is always true?

As x approaches 2, $f(x)$ approaches 5.809.

A. $f(2)$ is close to or exactly 5

B. $f(5) = 2$

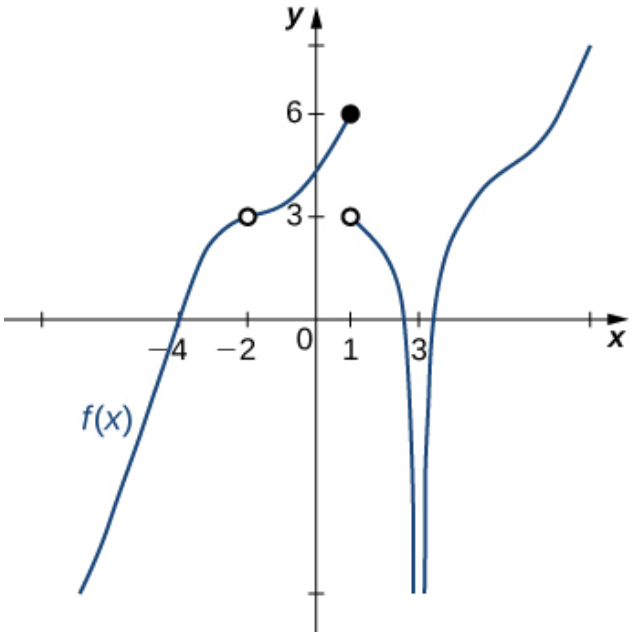
C. $f(2) = 5$

D. $f(5)$ is close to or exactly 2

E. None of the above are always true.

---

21. For the graph below, evaluate the limit: $\lim_{x \to 3} f(x)$.



A. $-\infty$

B. 1

C. -2

D. The limit does not exist

E. None of the above

---

22. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \to 3^-} \frac{-8}{(x+3)^8} + 2$$

A. $-\infty$

B. $f(3)$

C. ∞

D. The limit does not exist

E. None of the above

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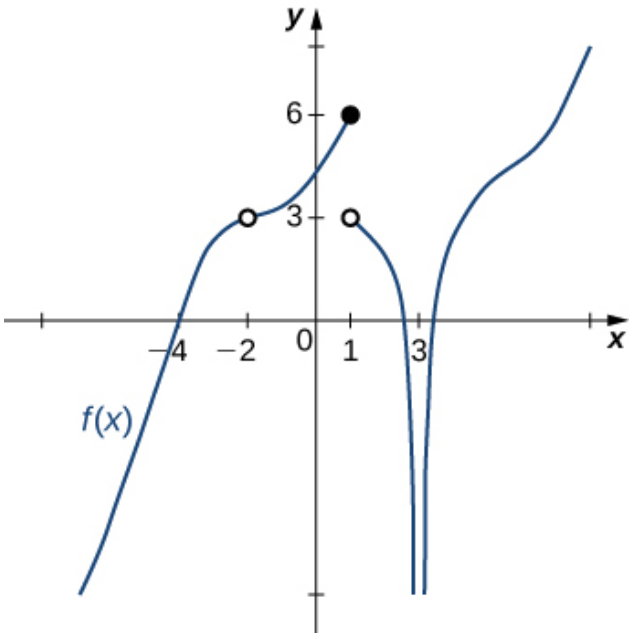
23. For the graph below, find the value(s) a that makes the statement true: $\lim_{x \to a} f(x)$ does not exist.



A. 3

B. -2

C. 1

D. Multiple a make the statement true.

E. No a make the statement true.

---

24. Evaluate the limit below, if possible.

$$\lim_{x\to 9} \frac{\sqrt{9x-32}-7}{3x-27}$$

A. 0.214

B. 0.024

C. ∞

D. 0.071

E. None of the above

---

25. Evaluate the limit below, if possible.

$$\lim_{x\to 9} \frac{\sqrt{7x-27}-6}{6x-54}$$

A. ∞

B. 0.441

C. 0.097

D. 0.083

E. None of the above

---

26. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x\to -8^+} \frac{3}{(x-8)^7}+2$$

A. ∞

B. $f(-8)$

C. $-\infty$

D. The limit does not exist

E. None of the above

---

27. To estimate the one-sided limit of the function below as x approaches 7 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{7}{x}-1}{x-7}$$

A. $\{6.9000, 6.9900, 7.0100, 7.1000\}$

B. $\{7.0000, 7.1000, 7.0100, 7.0010\}$

C. $\{6.9000, 6.9900, 6.9990, 6.9999\}$

D. $\{7.1000, 7.0100, 7.0010, 7.0001\}$

E. $\{7.0000, 6.9000, 6.9900, 6.9990\}$

---

28. To estimate the one-sided limit of the function below as x approaches 2 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{2}{x}-1}{x-2}$$

A. $\{2.0000, 1.9000, 1.9900, 1.9990\}$

B. $\{2.1000, 2.0100, 2.0010, 2.0001\}$

C. $\{1.9000, 1.9900, 2.0100, 2.1000\}$

D. $\{1.9000, 1.9900, 1.9990, 1.9999\}$

E. $\{2.0000, 2.1000, 2.0100, 2.0010\}$

---

29. Based on the information below, which of the following statements is always true?

$f(x)$ *approaches* 13.089 *as* x *approaches* 7.

A. $f(7) = 13$

B. $f(13)$ is close to or exactly 7

C. $f(7)$ is close to or exactly 13

D. $f(13) = 7$

E. None of the above are always true.

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30. Based on the information below, which of the following statements is always true?

As x *approaches* 6, $f(x)$ *approaches* ∞.

A. $f(x)$ is undefined when x is close to or exactly 6.

B. $f(x)$ is close to or exactly 6 when x is large enough.

C. $f(x)$ is close to or exactly ∞ when x is large enough.

D. x is undefined when $f(x)$ is close to or exactly ∞.

E. None of the above are always true.
